

THURSDAY, 09/23/2009
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Please replace the paragraph beginning at page 79, line 10, with the following rewritten paragraph:

Furthermore, in accordance with the present invention, when the aspect relating to the injection process for injecting the two-pack urethane foam composition is applied to the aspect relating to the injecting apparatus for the closed sectional structure of the vehicle body, the cream time can be set to within 3 seconds and the rise time can be set to 10 to 120 seconds after the injection so that the leakage and expansion of the injected material can be prevented, and the clogging thereof during the injection process can be prevented, too. This can further improve efficiency of a mass production of vehicle bodies because this embodiment can efficiently inject and fill the two-pack urethane foam composition smoothly in a large quantity of vehicle bodies.

IN THE CLAIMS:

Please cancel claims 2-5.

Please amend claims 8, 13, 17, 24, 27, 36, 39, 46, 48, 51, 58, 59, 63, 66-73 and 76 as follows:

8. (Amended) The cured urethane foam-filled vehicle body member as claimed in claim 6, wherein the cured urethane foam-filling confirming opening having an opening size of 1-7.5 mm is disposed on this side by 30 mm or shorter from the limit position in which the cured urethane foam eventually reaches.

13. (Amended) The cured urethane foam-filling confirming method as claimed in claim 11, wherein the temperature is measured with an infrared thermal image device or an infrared radiation thermometer.

17. (Amended) The injection process as claimed in claim 14, wherein the foaming agent is water.

24. (Amended) The injecting apparatus as claimed in claim 18, further comprising a

27. (Amended) The injecting apparatus as claimed in claim 24, wherein:

36. (Amended) The vehicle body-injecting apparatus as claimed in claim 31, further comprising:

39. (Amended) The vehicle body-injecting apparatus as claimed in claim 36, wherein:

46. (Amended) The injecting method as claimed in claim 44, wherein:

48. (Amended) The injecting method as claimed in claim 43, further comprising:

the step of monitoring a foamed state and a cured state of said foaming material filled in the inside of said closed sectional structure of the vehicle body.

51. (Amended) The injecting method as claimed in claim 48, wherein:

the step of monitoring comprises the step of detecting the foamed state of said foaming material filled in said closed sectional structure of the vehicle body with an infrared camera; and the step for converting a signal of the temperature from said infrared camera into a thermal image data.

58. (Amended) The injecting method as claimed in claim 56, wherein:

the step of sensing said amount of deviation comprises:

the step of saving a reference image of said injection port;

the step of picking up an image of said injection port of said closed sectional structure of the vehicle body; and the step of detecting said amount of deviation by comparing an image of said injection port picked up above with said reference image saved above.

59. (Amended) The injecting method as claimed in claim 55, further comprising:

the step of monitoring a foamed state and a cured state of said foaming material filled in the inside of said closed sectional structure of the vehicle body.

63. (Amended) The injecting method as claimed in claim 59, wherein:

the step of monitoring comprises:

the step of detecting the cured state of said foaming material filled in said closed sectional structure of the vehicle body with an infrared camera; and

the step for converting a signal of the temperature from said infrared camera into a thermal image data.

66. (Amended) The injecting apparatus as claimed in claim 18, wherein:
a two-pack urethane foam composition is used as said foaming material.

67. (Amended) The injecting apparatus as claimed in claim 31, wherein:
a two-pack urethane foam composition is used as said foaming material.

68. (Amended) The injecting method as claimed in 43, wherein:
a two-pack urethane foam composition is used as said foaming material.

69. (Amended) The injecting method as claimed in claim 55, wherein:
a two-pack urethane foam composition is used as said foaming material.

70. (Amended) The injecting method as claimed in claim 18, wherein:
said injector is provided with a discharging and injecting nozzle; and
said discharging and injecting nozzle is engageable with said injection port when said injector
is aligned with said injection port of said closed sectional structure of the vehicle body.

71. (Amended) The injecting method as claimed in 31, wherein:
said injector is provided with a discharging and injecting nozzle; and
said discharging and injecting nozzle is engageable with said injection port when said injector
is aligned with said injection port of said closed sectional structure of the vehicle body.

72. (Amended) The injecting method as claimed in claim 43, wherein:
said injector is provided with a discharging and injecting nozzle; and
said discharging and injecting nozzle is engageable with said injection port when said injector
is aligned with said injection port of said closed sectional structure of the vehicle body.

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73. (Amended) The injecting method as claimed in claim 55, wherein:

said injector is provided with a discharging and injecting nozzle; and

said discharging and injecting nozzle is engageable with said injection port when said injector is aligned with said injection port of said closed sectional structure of the vehicle body.

76. (Amended) The injecting apparatus as claimed in claim 74, wherein:

upon injecting said two-pack urethane foam composition in the inside of said closed sectional structure of the vehicle body and supplying a cured urethane foam obtained by foaming and curing said two-pack urethane foam composition, said two-pack urethane foam composition is injected with a two-pack mixing high-pressure foaming machine in a counter flow under high pressure so as to allow a cream time from injection to be set to three seconds or shorter and a rise time therefrom to be set to 10 to 120 seconds.

Kindly add the following new claims 77-99:

77. The two-pack urethane foam composition as claimed in claim 3, wherein the foaming agent is one or a mixture of two or more selected from water and a chemically foaming agent or a thermally decomposable type.

78. The two-pack urethane foam composition as claimed in claim 3, wherein the urethane foam is formed as an injected and foamed material in a pillar having a closed sectional structure of the body of a vehicle including an automobile.

79. The two-pack urethane foam composition as claimed in claim 4, wherein the urethane foam is formed as an injected and foamed material in a pillar having a closed sectional structure of the body of a vehicle including an automobile.

87. The vehicle body-injecting apparatus as claimed in claim 32, further comprising:
a monitor device for monitoring a foamed state and a cured state of said foaming material filled in the inside of said closed sectional structure of the vehicle body.

88. The vehicle body-injecting apparatus as claimed in claim 37, wherein
said monitor device comprises an infrared camera for monitoring the foamed state of the foaming material filled in said closed sectional structure of the vehicle body and a thermal image unit for converting a signal of the temperature from said infrared camera into a thermal image data and display the thermal image.

89. The vehicle body-injecting apparatus as claimed in claim 38, wherein
said monitor device comprises an infrared camera for monitoring the foamed state of the foaming material filled in said closed sectional structure of the vehicle body and a thermal image unit for converting a signal of the temperature from said infrared camera into a thermal image data and display the thermal image.

90. The injecting method as claimed in claim 45, wherein:
the step of sensing said amount of deviation comprises:
the step of saving a reference image of said injection port;
the step of picking up an image of said injection port of said closed sectional structure of the vehicle body; and
the step of detecting said amount of deviation by comparing an image of said injection port picked up above with said reference image saved above.

91. The injecting method as claimed in claim 44, further comprising:
the step of monitoring a foamed state and a cured state of said foaming material filled in the inside of said closed sectional structure of the vehicle body.

92. The injecting method as claimed in claim 49, wherein:

the step of monitoring comprises the step of detecting the foamed state of said foaming material filled in said closed sectional structure of the vehicle body with an infrared camera; and the step for converting a signal of the temperature from said infrared camera into a thermal image data.

93. The injecting method as claimed in claim 50, wherein:

the step of monitoring comprises the step of detecting the foamed state of said foaming material filled in said closed sectional structure of the vehicle body with an infrared camera; and the step for converting a signal of the temperature from said infrared camera into a thermal image data.

94. The injecting method as claimed in claim 57, wherein:

the step of sensing said amount of deviation comprises:

the step saving a reference image of said injection port;

the step of picking up an image of said injection port of said closed sectional structure of the vehicle body; and

the step of detecting said amount of deviation by comparing an image of said injection port picked up above with said reference image saved above.

95. The injecting method as claimed in claim 56, further comprising:

the step of monitoring a foamed state and a cured state of said foaming material filled in the inside of said closed sectional structure of the vehicle body.

96. The injecting method as claimed in claim 60, wherein:

the step of monitoring comprises:

the step of detecting the cured state of said foaming material filled in said closed sectional structure of the vehicle body with an infrared camera; and

the step for converting a signal of the temperature from said infrared camera into a thermal image data.

97. The injecting method as claimed in claim 61, wherein:

the step of monitoring comprises:

the step of detecting the cured state of said foaming material filled in said closed sectional structure of the vehicle body with an infrared camera; and

the step for converting a signal of the temperature from said infrared camera into a thermal image data.

98. The injecting apparatus as claimed in claim 75, wherein:

upon injecting said two-pack urethane foam composition in the inside of said closed sectional structure of the vehicle body and supplying a cured urethane foam obtained by foaming and curing said two-pack urethane foam composition, said two-pack urethane foam composition is injected with a two-pack mixing high-pressure foaming machine in a counter flow under high pressure so as to allow a cream time from injection to be set to three seconds or shorter and a rise time therefrom to be set to 10 to 120 seconds.

99. The injecting apparatus as claimed in claim 43, wherein:

a two-pack urethane foam composition is used as said foaming material.